

## **WHAT IS CLAIMED IS:**

1. A method for winding a single coil of a coil unit for a linear motor, the single coil having a shape of a nearly rectangular ring as a whole, the method comprising:

the step of feeding out a conductive wire serving as material for the single coil in a direction of a Z-axis, a winding former being positioned with its center at a point of origin on X- and Y-axes, the winding former having locks for a wire at positions corresponding to vertices of said rectangle and functioning as a base in winding the conductive wire into the nearly rectangular shape, where a direction for the conductive wire to be fed out is defined as the Z-axis, and axes crossing at right angles within a plane perpendicular to the Z-axis are defined as X- and Y-axes, respectively;

the first rotating step of rotating the winding former by 180 degrees about the X-axis while locking a single conductive wire fed in the direction of the Z-axis to one of said locks;

the second rotating step of rotating the winding former by 180 degrees about the Y-axis after the conductive wire is rendered lockable to the next lock in the first rotating step;

the third rotating step of rotating the winding former by 180 degrees about the X-axis after the conductive wire is rendered lockable to the next lock in the second rotating step; and

the fourth rotating step of rotating the winding former by 180 degrees about the Y-axis after the conductive wire is rendered lockable to the next lock in the third rotating step,

the first through fourth rotating steps being repeated subsequently to

wind the conductive wire around the winding former successively.

2. A single coil of a coil unit for a linear motor wound by the method of winding according to claim 1.

3. A method for forming a single coil of a coil unit for a linear motor, comprising the steps of:

loading the single coil according to claim 2 into a forming tool, and temporarily fastening the forming tool with the single coil wound around the winding former;

passing a predetermined current through the conductive wire to cause heat so that the conductive wire rises in temperature until it enters a plastic range; and

fastening the forming tool further from the temporarily-fastened state to shape the conductive wire in the plastic range into predetermined configuration.

4. A method for fabricating a coil unit for a linear motor, comprising the steps of:

cooling the single coil formed by the method of forming according to claim 3, and then removing the forming tool loaded;

preparing a plurality of single coils removed of forming tools, loading the same into a forming device for a unit, and fastening the same;

connecting the plurality of single coils to each other according to a specification of the coil unit; and

fixing the connecting conductors of the individual single coils with an adhesive.

5. A method for shaping a coil unit for a linear motor, comprising the steps of:

releasing the single coil according to claim 2 from said winding former;

preparing a plurality of single coils released from winding formers, loading the same into a first forming device for a unit, and temporarily fastening the same;

connecting the plurality of single coils to each other according to a specification of the coil unit;

loading the plurality of connected single coils into a second forming device along with the first forming device, and temporarily fastening the same;

passing a predetermined current through the conductive wires of the respective single coils to cause heat so that the conductive wires rise in temperature until they enter a plastic range;

fastening the first and second forming devices further from the temporarily-fastened state to form the wires in the plastic range into predetermined configuration; and,

after the forming, fitting a forming tool for compression.